

CLAIMS

1. A device for purifying the exhaust gas of an internal combustion engine comprising:

5 a particulate filter arranged in the exhaust system, wherein said particulate filter is a wall-flow particulate filter comprising a partition wall having pores, said partition wall carrying a catalyst for absorbing and reducing NO_x on the exhaust gas upstream side surface thereof, said catalyst absorbing NO_x when
10 the air-fuel ratio in the surrounding atmosphere thereof is lean and releasing the absorbed NO_x when said air-fuel ratio is stoichiometric or rich;

a catalytic apparatus for purifying NO_x arranged in the exhaust system upstream of said
15 particulate filter, which catalytic apparatus carries a catalyst absorbing NO_x when the air-fuel ratio in the surrounding atmosphere thereof is lean and releasing the absorbed NO_x when said air-fuel ratio is stoichiometric or rich; and

20 control means for making the air-fuel ratio in said catalytic apparatus rich to release NO_x from said catalyst of said catalytic apparatus to purify the released NO_x by reduction, and making the air-fuel ratio in the particulate filter rich to release
25 active-oxygen from said catalyst of said particulate filter to oxidize the particulates trapped on said particulate filter by the released active-oxygen.

2. A device for purifying the exhaust gas of an internal combustion engine comprising:

30 a particulate filter arranged in the exhaust system, wherein said particulate filter is a wall-flow particulate filter comprising a partition wall having pores, said partition wall carrying an oxidation catalyst on the exhaust gas upstream side surface
35 thereof;

a catalytic apparatus for purifying NO_x arranged in the exhaust system upstream of said particulate filter, which catalytic apparatus carries a catalyst absorbing NO_x when the air-fuel ratio in the

surrounding atmosphere thereof is lean and releasing the absorbed NO_x when said air-fuel ratio is stoichiometric or rich; and

control means for making the air-fuel ratio in said catalytic apparatus rich to release NO_x from said catalyst of said catalytic apparatus to purify the released NO_x by reduction, and making the air-fuel ratio in the particulate filter rich to cancel oxygen contamination on said oxidation catalyst of said particulate filter.

3. A device for purifying the exhaust gas of an internal combustion engine, comprising:

a particulate filter arranged in the exhaust system, wherein said particulate filter is a wall-flow particulate filter comprising a partition wall having pores, said partition wall carrying an oxygen absorbing agent on the exhaust gas upstream side surface thereof;

a catalytic apparatus for purifying NO_x arranged in the exhaust system upstream of said particulate filter, which catalytic apparatus carries a catalyst absorbing NO_x when the air-fuel ratio in the surrounding atmosphere thereof is lean and releasing the absorbed NO_x when said air-fuel ratio is stoichiometric or rich; and

control means for making the air-fuel ratio in said catalytic apparatus rich to release NO_x from said catalyst of said catalytic apparatus to purify the released NO_x by reduction, and making the air-fuel ratio in the particulate filter rich to release active-oxygen from said agent of said particulate filter to oxidize the particulates trapped on said particulate filter by the released active-oxygen.